

CLAIMS

- 5 1. A microwave or radiofrequency device comprising an applicator (1, 111) designed to house an object (3, 113) to be treated and several generators supplying power to the applicator via propagation guides, characterized in that three propagation guides (101-103, 201-203, 301-303, 401-403) propagating the microwaves or radiofrequency waves generated respectively by three generators are mounted respectively on three plates (71-73) forming a three-axis orthogonal coordinate system (OX, OY, OZ) and are arranged symmetrically with respect to a ternary axis of symmetry (Δ) of the coordinate system so that the generators supply power to the applicator while being mutually decoupled.
- 10 2. The device as claimed in claim 1, characterized in that the three propagation guides (101-103, 201-203) are of rectangular cross section and mounted respectively on the three plates so that the short sides (91-93) of their rectangular cross section remain pairwise orthogonal.
- 15 3. The device as claimed in claim 2, characterized in that each propagation guide (101-103) extends along a longitudinal propagation direction (L1-L3) perpendicular to the plate on which it is mounted.
- 20 4. The device as claimed in claim 2, characterized in that each propagation guide (201-203) extends along a longitudinal propagation direction ($\ell 1$ - $\ell 3$) parallel to the plate on which it is mounted.
- 25 5. The device as claimed in claim 3 or 4, characterized in that the three propagation guides

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emerge in the applicator via microwave-transparent windows (41-43) formed at one end of each propagation guide.

5 6. The device as claimed in claim 3 or 4, characterized in that the three propagation guides emerge in the applicator via slots (51-53, 51A-53A, 51B-53B) formed on one side (91-93, 21A-23A, 21B-23B) of each propagation guide.

10 7. The device as claimed in claim 1, characterized in that the three propagation guides (301-303) are coaxial cables that extend along a longitudinal propagation direction (L1-L3) perpendicular to the plates (71-73) and emerge in the applicator via a current loop (411-413).

20 8. The device as claimed in claim 1, characterized in that the three propagation guides (401-403) are coaxial cables that extend along a longitudinal propagation direction (L1-L3) perpendicular to the plates (71-73) and emerge in the applicator via one of their stripped ends (81-83).

25 9. The device as claimed in claim 1, characterized in that the propagation guides occupy a variable position through a rotation about their longitudinal propagation direction (L1-L3, $\ell 1-\ell 3$) and through a translation parallel to the plates (71-73) on which they are mounted, while preserving the symmetry with respect to the ternary axis of symmetry (Δ) of the coordinate system (OX, OY, OZ) in order to adjust the decoupling of the generators according to the shape of the object (3) housed in the applicator (1).

35 10. The device as claimed in claim 1, characterized in that the applicator (1) is of circular or triangular cross section.

11. The device as claimed in claim 1, characterized in that the applicator is a chemical reactor or a glass furnace (111).